Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period:\_\_\_\_\_

Biology Ecology Study guide

1. **Bean germination lab and biodegradable detergent**
   * For most groups, why did the control group seeds germinate the most?
   * **What is the purpose of having a control?**
   * What variables were kept constant (same)? Why were those variables kept constant?
   * What factors must be considered about biodegradable substances?
     1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
     2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
     3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   * The detergent used in the lab was biodegradable. Just because something is biodegradable does that mean it won’t harm living things? EXPLAIN!
2. **Food webs**: Show how \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ moves in ecosystem

* Be able to explain what would happen to a pop. in food web if other pop. increases or decreases
* Be able to create a food web
* Be able to identify the following in a food web:
  + - Autotrophs/Producers (usually convert sunlight energy into sugar via photosynthesis)
    - Primary, secondary, and tertiary consumers/heterotrophs

1. **Nitrogen & Phosphorus cycles**

* N found in atmosphere, soil, plants, animals, water, etc.
* Bacteria in soil turn atmospheric N into N that plants can absorb and use; Other bacteria in soil turn N in soil into atmospheric N
* *Agricultural runoff contributes about 40% of the nitrogen population in the Chesapeake Bay*
* **What is eutrophication?**
* **Be able to explain in detail how are dead zones are created**

1. **Ecology Vocab**

Ecosystem, Population, Community, Organism, Abiotic, Biotic

1. **Population growth curves**
   * Exponential growth (j-curve): rapid growth of population
     + Ex. Humans
   * Logistic growth (S-curve): rapid growth at first then growth, slowed by limiting factor (ex. space, food), finally leveling off
   * What is carrying capacity?
   * Human activity affects population growth
     + Ex. Kaibab deer population
   * What factors (biotic or abiotic) limit population growth?
2. **Invasive/nonnative/introduced species**

* What are they? How/why do they harm ecosystems?

1. **Graphing**

* Be able to create a graph given data
  + Label axes; Create proper intervals (1s, 5s, 10s, etc).

Average growth of seedlings in millimeters

|  |  |  |  |
| --- | --- | --- | --- |
| Day | Control | 1% Planet detergent | 10% Planet detergent |
| Day 1 | 0 mm | 0 mm | 0 mm |
| Day 3 | 10 mm | 3 mm | 0 mm |
| Day 5 | 13 mm | 6 mm | 0 mm |

